REMARKS

Claims 1-6 have been rejected under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Niu et al. US2003/0089890. Niu et al. disclose an electrically conductive composite comprising a polyvinylidene fluoride polymer or copolymer and nanotubes. The Examiner asserts that the product of Niu et al. is identical or only slightly different than applicants' claimed nanocomposite material. However, applicants submit that the present invention was conceived prior to July 11, 2001, the filing date of the Niu et al. publication. Applicant initially wishes to point out that the present application claims priority from parent application Serial No. 09/932,169, filed August 17, 2001 (now U.S. Patent No. 6,680,016). Enclosed with this response is a declaration under 37 CFR §1.131 which shows that the invention was conceived and reduced to practice prior to the filing date of Niu et al. The declaration demonstrates that, prior to the filing date of Niu et al., the inventors formed conductive polymer nanocomposite materials from a polymer and solvent solution mixture. Accordingly, Niu et al. is not prior art and cannot form the basis for a rejection under §102 or §103.

Claims 1-6 have been further rejected under 35 U.S.C. 102(b) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as obvious over Nahass et al., 5,643,502. Nahass et al. teach a polymeric composition having improved conductivity which is formed by combining carbon fibrils in the form of aggregates with a polymeric material and mixing with shear. The Examiner asserts that while the method disclosed in Nahass et al. differs from that claimed, he asserts that the resulting products would be identical. Applicants disagree. As taught in the present invention, the low-temperature solution process used to disperse the carbon nanofibers does not degrade the high aspect ratio of fibers in comparison with processes which use high shear mixing such as in the process taught by Nahass et al. Further, Nahass et al. do not teach or suggest the claimed electronic conducting percolation threshold recited in claim 6, which is indicative that the method of the present invention preserves the high aspect ratio of the carbon nanofibers. See the specification at page 3, fifth paragraph.

In addition, applicants teach the use of carbon **nano**fibers, i.e., all of the fibers are nanometer sized. In contrast, Nahass et al. teach the use of carbon fibrils which are in the form of aggregates having a substantially larger diameter of about 35 μm. It is believed that the use of such aggregates would not result in uniform dispersion of the carbon fibrils in a polymer matrix as in the present invention. As taught and claimed in the present invention, the solution mixture of the present invention which contains the nanofibers, solvent and polymer, is a substantially **homogeneous** mixture, which results in uniform dispersion of the nanofibers in the polymer matrix. This is not the case in Nahass et al., who require the use of large diameter aggregates in order to provide the desired toughness to the polymer resins. See the Abstract.

Further, as taught in the present invention, the uniform dispersion of carbon nanofibers in the polymer matrix results in a composite having enhanced conductivity. Nahass et al. clearly do not achieve uniform dispersion as they do not teach or suggest a composite having the claimed conductivity range recited in claim 5. Accordingly, the product of Nahass et al. is not identical to that of the present invention as asserted by the Examiner. Claims 1-6 are clearly patentable over Nahass et al.

For all of the above reasons, applicants submit that claims 1-6 are patentable over the cited references and are in condition for allowance. Early notification of allowable subject matter is respectfully requested.

Respectfully submitted,

DINSMORE & SHOHL LLP

By Susan M. Luna
Susan M. Luna
Registration No. 38,769

One Dayton Centre
One South Main Street, Suite 1300
Dayton, Ohio 45402-2023
Telephone: (937) 449-6429
Facsimile: (937) 449-6405